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WE'VE MOVED !!!

Editorial
by

FRED CORNETT

We are now located at Big Bear Lake, 8500 feet high in the San Bernardino Mountains of Southern California! This, among many other reasons, has caused this exceeding late issue. You will also be receiving a September/October issue later this month.

We are seriously considering going to a bi-monthly issue, but will expand such an issue to double it's current size (i.e., 24 pages). Therefore a 12 issue subscription would become a six issue subscription. I don't believe we would find any problems meeting our deadlines with the expanded time frame! Please write or call us with your comments, we need input in this area!

Now, on to serious matters. As mentioned in our last issue we are reviewing a 16K add-on (VIPER I) with new "EXPANDED BASIC" language (8K). Our findings after finally receiving a VIPER for review can be summed up in one word: "WOW"!!!

We placed our Bally on top of the "VIPER I" unit and plugged the cable into the 40 pin connector on the rear of the Bally. We also plugged the Bally AC converter into the filtered AC outlet provided on

the rear of the "VIPER I". This allowed us to turn on the "VIPER I" using the lighted On/Off Switch and the Bally at the same time.

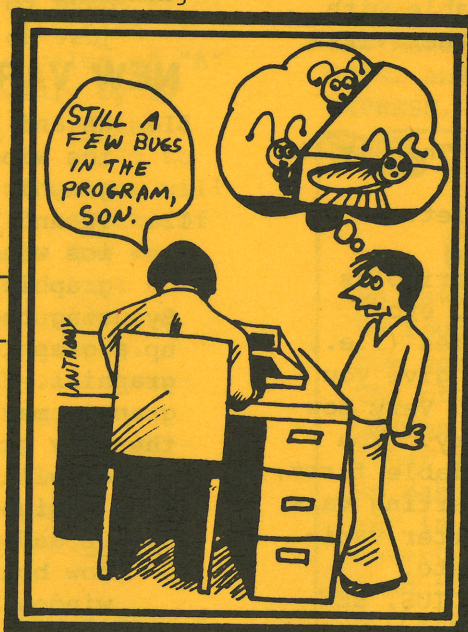
If you are one of our new readers and do not have the "Old BASIC" with separate Audio Cassette Interface, the "VIPER I" will not be usable by you until a later date. The "8K Extended Basic" has to be re-written for the built-in Audio Interface which is included in the NEW "BASIC CARTRIDGE".

The VIPER has 3 switches built into the front panel: left-most is On/Off; center is Auto Write Protect/Program Write; right-most is Address - 8K/24K.

We started by pressing the ON and Program Write and 24K Address switches. Next, we put the "Extended Basic 1.0" tape into our tape recorder, keyed in ":INPUT" and "GO", and pressed "PLAY" on our recorder. After a short

"BASIC" program loaded, the

Bally proceeded to load the New 8K BASIC behind it in machine language with nothing showing on-screen. This load required 8½ minutes. Upon completion of load, "LOAD DONE, SET AUTO WRITE MODE, CALL 24576 TO START" was printed on screen. We were, however, forewarned by the people at "ALTERNATIVE ENGINEERING" that the VIPER would be looking for full size ASCII Keyboard Input through the built-



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in Keyboard connector, and since we didn't have their keyboard attached we should do a POKE before we pressed the "AUTO WRITE" Protect switch. So we keyed in "%(31703)=201", HIT GO, pressed the "AUTO WRITE" protect switch and then keyed in "CALL 24576" and pressed "GO". The screen cleared immediately and "EXTENDED BASIC 1.0" was printed on-screen in a tiny 3 x 5 blue character set. We were in business!

The "VIPER I" comes with 2 tapes; #1: The Language, with "EXT. BASIC DEMO", on the flip side and #2: "CHECKSUM PROGRAM for EXT. BAS. 1.0" with "VIPER TEST PATTERN" on the flip side.

Alternative Engineering suggested we load the "CHECKSUM" program which would automatically check the original load for errors. We did so with a ":INPUT" and "GO" again. By using the program, you will be assured of a perfect load.

Next, we loaded the "DEMO" tape, which gave us an on-screen listing of all the new commands available followed by a dazzling full color demo of these commands. The following is a partial listing of the new commands available with the "EXTENDED BASIC 1.0" and the "VIPER I"

NEW COMMANDS....

1. NEW: Erases all memory. This is the same as a reset.
2. ZERO: Zeroes all single letter variables (A - Z).
3. DEFAULT: Resets device variables such as character windows, etc.
4. DATA: Initializes variables (i.e., DATA @ (5), 10, 20, 30, will give you @ (5)=10 @ (6)=20 @ (7)=30). Very powerful, saves lots of memory. You merely place starting variable first; we could have used any starting variable including single letter variables such as A, B or C, etc.
5. CIRCLE: Format = X,Y, RADIUS, NEW MODE. Example: CI.0,0,20,1 (see NEW MODE later in article) will put up a 1 pixel thick circle in the center of the screen 20 pixels wide; or, FOR R=1 TO 20; CI.0,0,R,1; NEXT R will put up a solid circle in the same location.
6. SCROLL: Format = X,Y,X size,Y size, Number of lines (Pixels).
7. SNAP: Format = X,Y,X size,Y size,

starting string location. Imagine you had built a 10 pixel by 10 pixel character in the center of the screen - to save this entire character plus a small border around him so he could move around the screen without blinking and erasing any trail you would key in SNAP0,0,12,12,@(0). This character would then reside in strings @(0) through @(23) [12 + 12=24].

8. SHOW: Format = X,Y,Showmode,@(#)
After you have SNAPPED a character, you can now clear the screen and SHOW him any where you want virtually instantaneously (in the same or different colors)!!
9. SHOWMODE: 0 = Plop; 1 = OR; 2 = XOR
10. NEW MODES: 0 = Nothing; 1 = XOR 1; 2 = XOR 2; 3 = XOR 3; 4 = PLOP 0; 5 = PLOP 1; 6 = PLOP 2; 7 = PLOP 3

If you did not understand 9 or 10 above, suffice it to say that this is the machine language way of getting dramatic color effects. In Bally Basic, the only way to get these effects is to learn machine language and POKE you routines in RAM. With Extended Basic, you don't have to thoroughly understand, you just do it!

NEW VARIABLES....

11. XL and XR: XL = Left boundary graphics window. XR = Right boundary graphics window.
12. YT and YB: YT = Top boundary graphics window. YB = Bottom boundary graphics window.

By using these four variables you can set up a graphics window that will display graphics. Even though the size of your graphic may exceed the window boundaries, the only graphics that will show on-screen will be within the window you have designed.

13. CL and CR: CL = Left character window boundary. CR = Right character window boundary.
14. CT and CB: CT = Top character window boundary. CB = Bottom character window boundary.

The use of these 4 variables allows you to pull some extremely sharp tricks with on-screen printing: Setting CL=0; CR=4; CT=50; CB=-50; LIST will allow you to list a program vertically one letter at a time instead of horizontally one line at a time with scrolling.

15. CF = CHARACTER FONT. The use of this variable allows you to select large or small characters in a print statement. CF=LA.: PRINT "HI" would PRINT "HI" in large characters.
16. CC = CHARACTER COLOR
17. FA = FOREGROUND COLOR #1
18. FB = FOREGROUND COLOR #2
19. FC = FOREGROUND COLOR #3
20. BC = BACKGROUND COLOR
21. LC = Last character printed on screen. This variable will return the ASCII value of the last character printed. We don't immediately find any tremendous use for this one!
22. NB = NUMBER BASE: 2 = Binary; 10 = Decimal; 16 = Hexidecimal. Example: Here is a decimal to hexadecimal converter program:

```
10 INPUT "?",D; NB=16; PRINT D; NB=
10; GOTO 10
```
23. ! = Converts Hex to Decimal when placed in front of a Hex value such as, PRINT !2FF will yield 767 printed on-screen.
24. ← = Placing a ← in front of any variable (except SZ) will return with it's memory location. Such as: PRINT ←C will yield "-29522".

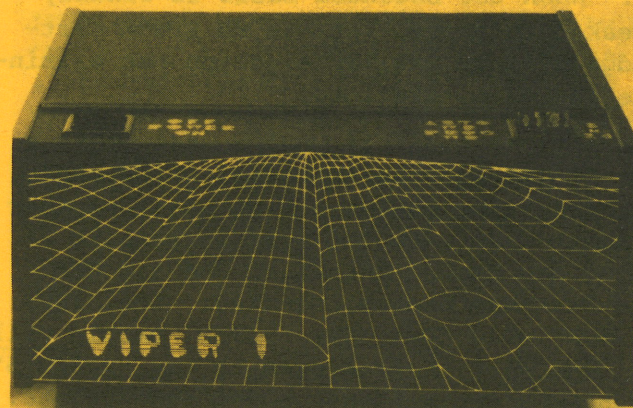
The following is a listing of the "VIPER TEST PATTERN":

```
1. " VIPER TEST PATTERN "
2. EXTENDED BASIC 1.0
3. ALTERNATIVE ENGINEERING
4. P.O. BOX 128
5. GARDINER , MAINE 04345
6.
10 CLEAR ;BC=0
30 DATA A,0,0,0,0;E=RND (7)
40 FOR Z=1TO RND (25)+15STEP RND (2)+1
50 CIRCLE 0,0,Z,E+1;CIRCLE 0,0,Z-10,E-1;CIRCLE 0,0,Z+10,E+2
;BOX -A,B,C,D,E;BOX A,-B,C,D,E;BOX 0,0,Z-15,Z-15,E-2;BOX
-A,-B,C,D,E;BOX A,B,C,D,E;A=A+2;B=A-1;C=C+2;D=C;NEXT Z
60 GOTO 30
```

This program puts up a gorgeous ever-changing complex pattern on the screen. You would swear that 32 different colors are on screen at the same time.

The VIPER is designed to match your Bally Unit, it is black with walnut sides. This is a professionally produced product and the PC Boards and Components are a delight to behold!! No wire wrapping here! The total price for the "VIPER I" including 8K extended BASIC is \$250.00. (We had heard of \$225. introductory price, and they told us they are not honoring

the \$225 price any longer). Alternative Engineering will have a plug-in Keyboard available sometime in November '81 at \$175.00 which will plug in the rear of the "VIPER I". This unit is available directly from ALTERNATIVE ENGINEERING, P. O. BOX 128, Gardiner, Maine 04345; allow approximately 8 weeks for shipping or you may order a "VIPER I" from The Basic Express on a C.O.D. basis, please call us for details.



After having the "VIPER I" for the past 10 days, we are absolutely fascinated with it. Alex Morales and I spent one afternoon and evening developing a "Carousel" program for it -- you know - the Arcade game that is a shooting gallery with the ducks that must be shot before they reach the bottom row and eat up your bullets! That game was 75% functionally finished after only four hours!

Looking at the "VIPER I" and Extended Basic in the cold reality of daylight, we found 4 problems with it: One hardware and three software - all easily rectified.

HARDWARE: It is wise to use the "VIPER I" with a 3 prong grounded outlet, otherwise you could have "glitch problems" when you turn on some other appliance on the same circuit. (Shame on you, all your outlets should be properly grounded anyway)

SOFTWARE: (A) Temporary Problems: the end of memory pointer is set to sh-allow and does not allow total access. This can and will be rapidly changed.

(B) The Command Word Tokens (Print, Data, Circle, etc.) are located in the lower case ASCII area instead of as control characters in the 0 - 30 decimal ASCII area. This means, until we modify the

language your printer won't be able to print lower case characters. This was done purposely so all your old software would also work in Extended Basic.

(C) When using the print function within an INPUT STATEMENT such as [INPUT "SZ",G] the computer will print out "SIZEG".

The beauty of having the Extended Basic on tape is that we can and will modify it. When the Extended Basic is finally tweaked to perfection, an 8K EPROM Cart-ridge will be available so you can eliminate the 8½ minute load!

Finally, we feel, if you've been waiting for ZGRASS and the AstroVision add-under, it looks like you've got at least another 6 month wait, and the word is that it is being downgraded to 16K of RAM and CPM and Disk has been eliminated. The VIPER is available NOW! The "VIPER" people will be expanding their system to the "VIPER 5" with DISK Controllers, added memory, etc. We're thrilled and know you will be too. At \$250., how can you lose?



INVASION FORCE



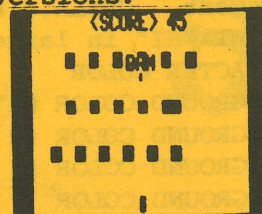
This game works similarly to Space Invaders in that the characters march across the screen, when they hit the sides, they move down a row. If you let them get down to your gun emplacement, you'll be destroyed.

HINT: You gain more points by hitting two Invaders when they converge or damage the force field on either side of the screen with an explosion from an exploding Invader. For these feats, you get an additional 50 points plus what you would normally get for one Invader. The top Invaders are worth more than lower ones.

EDITORS NOTE: Mike's newest tape, "LOOKOUT FOR THE BULL" is one of the best we've seen written in Basic! Take a look at the WaveMakers ad for more information.

One more note: Many people who bought WaveMakers "PACK RAT" are unaware that this tape has 2 versions of the game on EACH side - Side One is simple graphics with fast action, Side Two is complex graphics with slower action. The NEW

AstroVision Basic Versions are hidden within the waiting periods between his logo and program, this gives you a total of four versions.



INVASION FORCE

BY: MIKE PEACE (WAVEMAKERS)

```

1 .INVASION FORCE
2 .BY MIKE PEACE
3 .ZBZBPAIAA0MFPWW+1+1CX6*1+1+CMGTU
10 NT=0;G=23;B=-53;X=0;(&(9)=255;BC=-1;FC=0
20 C=10;S=-35;T=0;J=6;CLEAR ;GOTO 70
30 IF PX(Y-6,S)+PX(Y+6,S)T=T+50;FOR Z=0TO 50;&(16)=Z;NEXT
  Z
35 T=T+(S+35)/6*5;CY=39;CX=-27;PRINT #0,"<SCORE> ",T
40 CY=S+1;CX=Y-5;FOR Z=-24539+RND (5)TO Z+12STEP 5;TV=X(Z
  );NEXT Z
50 &(21)=255;&(23)=255;FOR D=1TO 20STEP 3;BOX Y,S,D,D,3;&
  (19)=D
60 BOX Y,S,D,D,3;NEXT D;&(23)=0;&(21)=0;BOX Y,S,18,20,2;I
  F S<30BOX X,-39,3,6,1
65 S=-35;RETURN
70 CY=0;CX=-48;FOR Z=-24523TO Z+16;TV=X(Z)-2;NEXT Z;E=-2;
  FOR H=-68TO 68STEP 5
80 E=E+H*20;BOX H,E,20,2,1;BOX -H,-E,20,2,1;NEXT H;CY=-27
  ;CX=-40;PRINT "INVASION FORCE";GOSUB 330
90 X=0;CLEAR ;FOR F=6TO 6-50STEP -20;FOR A=BTO B+75STEP 1
  5;BOX A,F,6,6,1
100 NEXT A;NEXT F;&(17)=160;&(18)=128;BOX 0,0,160,88,3;BOX
  0,0,136,86,3
110 I=0;FOR F=6TO 6-50STEP -20
120 FOR A=BTO B+75STEP 15;IF PX(A,F)=0NEXT A;NEXT F;GOTO 1
  40
130 IF F>-40IF PX(A,F)BOX A,F,6,12,2;BOX A+C,F,6,6,1;I=1;I
  F F<-33GOTO 310
140 &(22)=255;X=X+JX(1)*4;BOX X,-39,3,6,3
150 IF S=-35IF TR(1)S=-34;Y=X;BOX X,S-3,1,6,3
160 IF S>-35BOX Y,S,1,12,3;S=S+6;&(16)=50+S;IF S>24BOX Y,S
  ,1,12,2;S=-35
170 V=196;IF S>-35V=0;IF (PX(Y,S)=1)+(PX(Y,S-5)=0)GOSUB 30
180 BOX X,-39,3,6,3;IF ABS(X)>66GOTO 300
190 &(20)=V;IF A<B+75NEXT A
200 IF F>6-50NEXT F
210 B=B+C;IF B<-55C=10;G=6-3
220 IF B>-20C=-10;G=6-3
230 IF I=0GOTO 250
240 GOTO 110
250 CY=0;CX=-35;PRINT "YOU GOT 'EM
260 J=J-5;G=J
270 GOSUB 330;GOTO 90
280 IF TR(1)16GOTO 280
290 RUN
300 &(21)=255;FOR Z=5TO 70STEP 5;BOX X,-36,3,6,3;BOX X,0,3
  ,88,3;&(19)=Z;&(23)=Z;NEXT Z

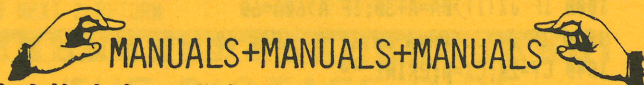
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```

310 Y=X;S=-39;GOSUB 30;GOSUB 40;GOSUB 40
320 &(21)=0;&(22)=0;CX=-20;CY=0;PRINT "GAME OVER";GOSUB 3
30;GOTO 200
330 FOR Z=1TO 600
340 NEXT Z;RETURN
350 .WAVEMAKERS (C)1981

```



MANUALS+MANUALS+MANUALS

1. Bally On-Board ROM Sub-Routines. Explains the use of the on-board routines which allow you to perform such things as you find in the "Machine Language Programs" in Cursor. Includes ASCII Standard & Nonstandard Character Sets, Cassette Memory Structure; Output Ports; Input Ports; Bally Data Base Locations; Bally Memory Locations; and On-Board ROM 8K Hex Dump. \$4.49
2. Hackers Manual. Describes features provided in the Tiny Basic but not documented in the Bally Instruction Booklet. (Additional Commands). \$3.99
3. Disassembled Tiny Basic (CDOS Z80 Assembler Version 02.15) A complete assembly language listing including OP Code and comments of the Tiny Basic Cartridge. \$8.49
4. Disassembled Brickyard & Clowns. A complete assembly language listing including OP Code and comments. \$9.99
5. Disassembled DEMO Cassette. A complete assembly language listing including OP Code and comments. \$8.49
6. Bally System Description Book. Extensive and includes "Electrical Specifications for Midway Custom Circuits", Timing Interrupt handling explanations, etc. \$8.99
7. Disassembled System Software. A complete assembly language listing including OP Code and comments to include: Home Video Game Equates; Port Equates; System Call Indexes; Macros; Music Macros; Music Equates; System RAM Memory Cells; User Supplied Routines; Masks; UPI Routines Address Tables; Sentry; BCD Divide; BCD Subtract & Add; Decrement Counters & Timers; Music CPU; Vectoring Routines; Paint Rectangle Routines; Write Routines; Character Display Routines; Display BCD; Menu Routines and much, much more. \$13.49
8. Disassembled On-Board Games. A complete assembly language listing including OP Code and comments to include: Scribbling, Calculator, Checkmate, Gun Fight. \$15.99
9. Bally Service Manual. Schematics, Parts Lists, instructions for removing RF Shields, and much more. No one should be without it!! \$3.50
10. PEEK n' POKE: The only manual written that is truly beginner level. Opens up the power of machine language; tells how to get floating point decimal out of this machine along with programs. \$8.25

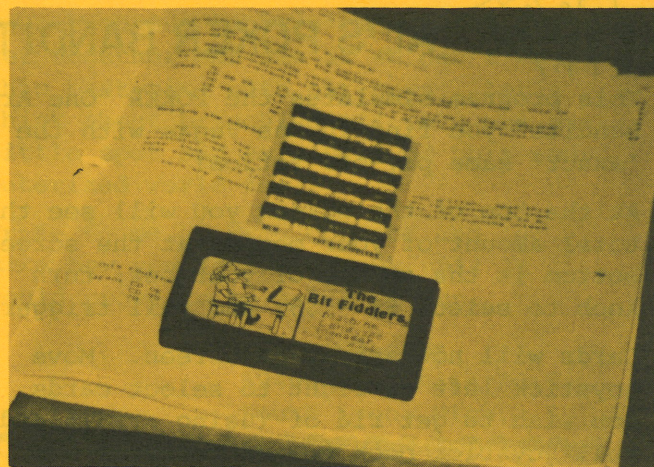
NOTE: ALL MANUALS INCLUDE FIRST CLASS POSTAGE

PLEASE NOTE: Due to the new Postal rate increase, we will be raising the price of our Manuals. Take advantage NOW and order the Manuals you want before 20 November 1981 and save money!



NEW CARTRIDGE

One of the most terrific things we've seen this year is the "MACHINE LANGUAGE MANAGER" cartridge offered by "THE BIT FIDDLERS". This cartridge plugs in to the front of the Bally like all game cartridges and comes with it's own NEW Keypad overlay and thick manual (42 pages of instructions plus a complete listing of the cartridge itself).



This is, to the best of our knowledge, the FIRST Non-Bally (or AstroVision) cartridge ever produced!

The cartridge uses a small 3 x 5 character set, which allows you to program directly in HEX and totally free's up the capability of the Bally. You can get up "4" colors without splitting the screen, and access many of the On-Board Subroutines that Bally Basic made impossible to use.

This cartridge also utilizes the tape interface, so everything can be stored and retrieved from tape.

For the beginner, this cartridge, along with a machine language programming guide provides a rather complete programming course. Even if you don't have any desire to learn machine language programming, games such as "BESERKER", etc., will be available shortly, written totally in machine language, giving you "PENNY ARCADE" quality and speed for under \$10. each. These games can only be utilized in conjunction with the "MACHINE LANGUAGE MANAGER" cartridge!

The cartridge will sell for \$54.95.

SPECIAL OFFER: We are currently stocking this cartridge for a limited time without a cartridge case for \$49.95. All you have to do is get out a game cartridge you never play, remove 4 screws and take out the board and replace it with the "MACHINE LANGUAGE MANAGER" board, and save yourself \$5.00.

Send \$49.95 (Calif. Residents add 6% sales tax) to the "BASIC EXPRESS", P.O. Box 1763, Big Bear Lake, CA 92315 prior to 20 November 1981!! (This cartridge is now in stock -- no waiting).



AL'S POKER BANDIT

This program simulates the POKER "One Arm Bandits" you find in Las Vegas with the 'exact' same pay-off ratios!

At the top of the screen you will see the total amount of your money, at the screen bottom is the amount of your bet; turn knob to select \$1 - \$5, and pull trigger.

Cards will now appear on screen. Move joystick left or right to select cards you wish to get rid of (using arrow) and pull joystick back toward yourself and move to next card. If you have the cards you want to keep, pull trigger!

ODDS TABLE

1 PAIR pays.....	1 x Bet
(Jacks or better)	
2 PAIR pays.....	2 x Bet
3 OF A KIND pays.....	5 x Bet
STRAIGHT pays.....	8 x Bet
FLUSH pays.....	10 x Bet
FULL HOUSE pays.....	15 x Bet
4 OF A KIND pays.....	25 x Bet
STRAIGHT FULSH pays....	50 x Bet
ROYAL FLUSH pays.....	250 x Bet

AL'S POKER BANDIT

BY: AL ROGINSKY

\$20

1.

5 CLEAR ;NT=0

20 &(9)=-1;BC=186;FC=127

30 C=25;G=0

50 GOTO 4000

90 C=C-Q;GOSUB 5100

100 FOR A=-60TO 60STEP 30;GOSUB 5000;NEXT A

110 W=0;G=0;H=0;J=0;K=0;I=5

150 FOR D=1TO 53;@ (D)=D;NEXT D

200 FOR A=-60TO 60STEP 30

250 BOX A,0,23,28,2

260 D=RND (52);IF @ (D)=99GOTO 260

270 @ (D)=D;CX=A;CY=0

280 IF D>39GOTO 500

290 IF D>26GOTO 450

300 IF D>13GOTO 400

350 PRINT "+";BOX A-1,0,5,3,3;E=D;F=1;GOTO 600

400 PRINT "V";BOX A-1,1,3,3,1;E=D-13;F=2;GOTO 600

450 PRINT "*";BOX A-1,0,5,3,3;BOX A-1,0,3,5,3;BOX A-1,-1,1,6,3;E=D-26;F=3;GOTO 600

500 PRINT "+";BOX A-1,0,3,3,3;E=D-39;F=4

600 IF A=-60R=F;L=E

610 IF A=-30S=F;M=E

620 IF A=0T=F;N=E

630 IF A=30U=F;O=E

640 IF A=60V=F;P=E

700 CX=A-7;CY=10

710 IF E=1PRINT "A



BET \$5

720 IF E=11PRINT "J
730 IF E=12PRINT "Q
740 IF E=13PRINT "K
750 IF (E>1)+(E<11)=2PRINT #0,E
760 @ (D)=99

770 IF W=1RETURN

800 NEXT A;A=-60

1000 IF JX(1)>0A=A+30;IF A>60A=60

1020 IF JX(1)<0A=A-30;IF A<-60A=-60

1040 CY=24;CX=A;PRINT "+

1050 FOR B=1TO 200;NEXT B

1060 CY=24;CX=A;PRINT " ";W=1

1070 IF TR(1)GOTO 2000

1080 IF JY(1)BOX A,0,26,32,2;GOSUB 5000;GOSUB 1500

1090 GOTO 1000

1500 IF A=-60G=A

1510 IF A=-30H=A

1520 IF A=0I=A

1530 IF A=30J=A

1540 IF A=60K=A

1550 RETURN

2000 IF G A=6;GOSUB 250

2010 IF H A=H;GOSUB 250

2020 IF I=0A=I;GOSUB 250

2030 IF J A=J;GOSUB 250

2040 IF K A=K;GOSUB 250

2100 CY=-30;CX=-10;PRINT "WAIT ";NT=3

2500 X=0;G=0;FOR Z=1TO 13;FOR Y=2TO 4

2510 IF (L=Z)+(M=Z)+(N=Z)+(O=Z)+(P=Z)=Y X=X+Y+1

2520 MU=Y+Z;NEXT Y;NEXT Z

2530 IF X=36=1

2540 IF X=46=5

2550 IF X=56=25

2560 IF X=66=2

2570 IF X=76=15

3000 FOR F=1TO 4

3010 IF (R=F)+(S=F)+(T=F)+(U=F)+(V=F)=56=10;W=5

3020 NEXT F

3500 FOR Z=1TO 4

3510 IF L>M B=L;L=M;M=B

3520 IF M>N B=M;M=N;N=B

3530 IF N>O B=N;N=O;O=B

3540 IF O>P B=O;O=P;P=B

3550 MU=Z;NEXT Z

3560 IF (L=M-1)+(M=N-1)+(N=O-1)+(O=P-1)=46=8;IF W=56=50

3570 IF L=1L=14;GOTO 3500

3580 IF (L=10)+(G=50)=26=250

3585 IF G=1GOSUB 6000

3590 IF GFOR Z=1TO 10;FC=RND (32)*8-1;CY=24;CX=-20;PRINT "WINNER";NEXT Z

3600 NT=0;G=6XQ

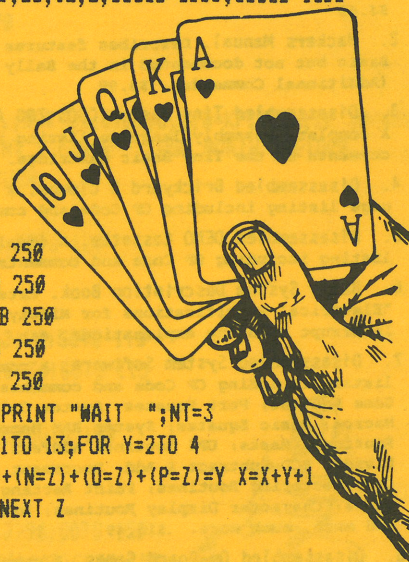
4000 CLEAR ;C=C+G;GOSUB 5100

4010 IF C<1CY=0;CX=-10;PRINT "BUSTED";STOP

4020 Q=KN(1)+25+5;Q=Q+2;CY=-30;CX=-10;PRINT "BET \$",#0,Q;
IF TR(1)=0GOTO 4020

4030 IF Q=0GOTO 4020

4040 IF C-Q<0GOTO 4020




```

4050 GOTO 90
5000 FOR B=1 TO 25 STEP 2
5010 BOX A,0,B,B+6,3;BOX A,0,23,B,3;NEXT B;RETURN
5100 CY=34;CX=-9;PRINT "$",00,C
5110 RETURN
6000 G=0;FOR Z=1 TO 14
6010 IF (L=Z)+(M=Z)+(N=Z)+(O=Z)+(P=Z)=26=1
6020 NEXT Z;RETURN

```

THE DISTAFF SIDE

by: Peggy Gladden

Dear Women:

Do you feel as though your "BASIC" everyday homelife is being "ERASED" "BYTE" by "BYTE"? Is everything getting sort-of "SUB-ROUTINE"? Has your "MEMORY" got a "CHIP" gone?

Ah-ha!! then it's "CLEAR" that you are the wife of a Bally lover. However, that's okay. Our men only think they can "INPUT" better!

You know, if we're not careful, we're gonna become a slowly forgotten tribe. We'll be allowing our husbands to be happily married to those inquisitive little machines that turn our TV rooms into instant arcades!

I don't know about the rest of you, but I feel it's time to program a copy of my marriage license so that my husband will remember who I am. All kidding aside, I would like to see us wives unite! There has to be a few of you out there who would like to become better acquainted with our competition. After all, behind every good man is a fantastic woman!!! (Doesn't that have a nice ring to it?)

I think it's time we participated. Don't get me wrong, I couldn't handle pushing those buttons or figuring out the language, but I think we could get our \$2's worth in.

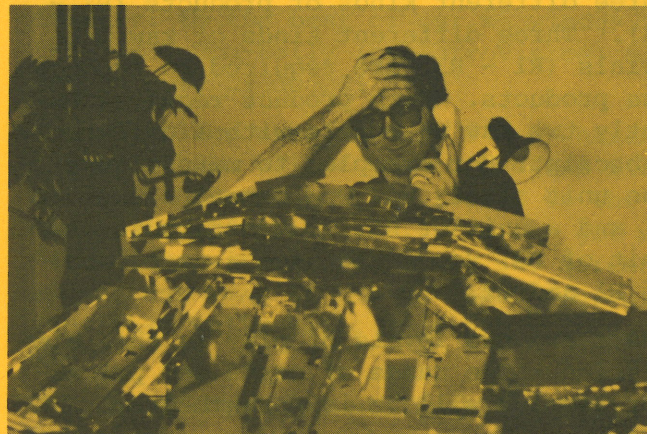
After all, we have some great minds too and I'm sure we could come up with programs to help our guys. For example, I got tired of using my calculator and expensive batteries for my bowling sheets (I'm secretary), so I had my husband write me a 'Secretary Program'. Fantastic!! I do my work in less than half the time.

I know that there are plenty of you out there who would like to participate in

your husbands hobby or work. So let's get together and see if we can't enjoy this past-time with our guys. Let's think about branching off into our own little spot and be a part of this computerized world too.

Write to me or Fred Cornett and let us know how you feel!! Speak up!! It could prove to be a lot of fun.

Peggy Gladden
59400 Nine Mile Road
South Lyon, Mich. 481/8



REPAIRS.....

The battle against the "Belligerent Bally Blues" continues!! If you are having trouble with your Unit or if you want to avoid future problems, we will give your Bally a Tune-Up.

For \$34.95 (plus \$5 return postage) we will Tune-Up your unit to include: bonding custom heat sinks on the 3 major chips; modify your RF Shielding to reduce heat build-up; remove the On/Off Switch from the circuit (this causes untold problems); tune the RF Modulator to improve your TV picture; and make general repairs as necessary. This does not include major parts such as a new Custom Data Chip, etc. If your Unit requires extensive repairs not covered by the above fee, we will ask your permission to complete the work.

PLEASE NOTE: If you send your Unit via US Mail send it to: The Basic Express, P.O. Box 1763, Big Bear Lake, CA 92315. If you send your Unit U.P.S., send it to: The Basic Express, c/o The Old Ice House, 711 Pine Knot, Big Bear Lake, CA 92315

We will also Tune-Up your hand controls for an additional \$8.50 per pair. If you include them with your unit you will save \$2.75 return postage. PLEASE DO NOT include unnecessary parts with your unit such as dust cover, cartridges, etc.



TYCOON

BY: ALEX MORALES

In this simulation you manage a small factory that produces three different kinds of products (P1 - P3). Three different kinds of raw materials (R1 - R3) are required to produce the products. Each product requires exactly two raw materials with a different subscript. For example, to manufacture one unit of P2, you would need a unit of R1 and a unit of R3. To manufacture one unit of P3, you would need a unit each of R1 and R2.

There are two levels of play in this simulation. The range of costs and prices for level 2 will be in parentheses.

The cost of raw materials varies from \$10 to \$20 (\$10 - 30) per unit. It costs from \$1 to \$9 (\$1 - 20) per unit to manufacture a product from raw materials. The selling price of each finished product varies from \$50 to \$90 (\$40 - 104) per unit. Prices of raw material and manufacturing costs will vary by not more than \$3 (\$5) per turn. Prices of finished products will vary by not more than \$6 (\$10) per turn.

You will receive a data report at the beginning of each turn. This report will give you the number of units you have on hand, available cash, and the manufacturing cost. You can buy (B), manufacture (M), sell (S), or do nothing (O) each turn. In order to manufacture a given product, you must have enough of the correct kind of materials on hand. If you make a mistake in ordering you will lose a month's transaction.

You can manage this factory monthly for up to 36 months in 12 month increments. After your time has expired, the materials and/or products that you have on hand will be automatically sold at the current prices and your profit will be computed.

TYCOON

A BUSINESS SIMULATION

BY: ALEX MORALES

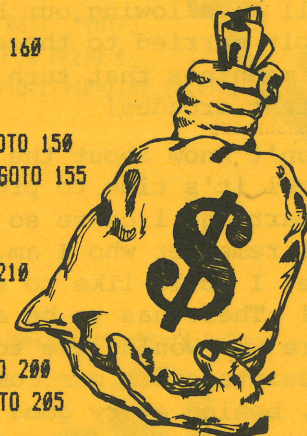
ITEM	MATERIALS	PRODUCTS
1	00\$18	00\$75
2	00\$18	00\$78
3	00\$18	00\$72

MONTH 0 YOU HAVE \$ 500
MFG. COSTS ARE \$2
TRANSACTION (D,B,M,S)? B



```

5 NT=1;CLEAR ;CY=0;INPUT " DIFFICULTY: 1 OR 2 +*Z;IF
(Z<1)+(Z>2)GOTO 5
10 CLEAR ;C=500;M=2
20 FOR I=1TO 3
30 @ (I)=0;@ (I+3)=0
40 @ (I+6)=RND (3)+15
50 @ (I+9)=RND (10)+70
60 NEXT I
70 GOTO 600
80 PRINT " ITEM# ? ",;BOX CX,CY,6,8,1;N=KP;TV=N;IF (N<49)
+(N>51)PRINT ;PRINT " ERROR - LOSE MONTH";RETURN
90 PRINT ;N=N-48;RETURN
100 FOR I=1TO 3
110 IF Z=1J=RND (5)-2;GOTO 120
115 J=RND (9)-4
120 J=@ (I+6)+J
130 IF Z=1IF (J<10)+(J>20)GOTO 110
135 IF Z=2IF (J<10)+(J>30)GOTO 115
140 @ (I+6)=J
150 IF Z=1J=RND (11)-5;GOTO 160
155 J=RND (20)-10
160 J=@ (I+9)+J
170 IF Z=1IF (J<50)+(J>90)GOTO 150
175 IF Z=2IF (J<40)+(J>105)GOTO 155
180 @ (I+9)=J
190 NEXT I
200 IF Z=1J=RND (5)-2;GOTO 210
205 J=RND (9)-4
210 J=M+J
220 IF Z=1IF (J<1)+(J>9)GOTO 200
225 IF Z=2IF (J<1)+(J>20)GOTO 205
230 M=J
240 RETURN
250 CLEAR ;PRINT " ITEM MATERIALS PRODUCTS
260 FOR I=1TO 3
270 CX=-59;PRINT #1,I,;CX=-35;PRINT #3,@ (I),"@",;CX=-11;P
RINT #1,"$",@ (I+6),;CX=30;PRINT #3,@ (I+3),"@",;CX=56;
PRINT #1,"$",@ (I+9)
280 NEXT I;RETURN
300 INPUT " AMT. OF MATERIALS?"A
310 GOSUB 80
330 C=C-A*@(N+6)
340 IF C<0GOTO 370
350 @ (N)=@ (N)+A
360 RETURN
370 C=C+A*@(N+6)
380 PRINT " INSUFFICIENT FUNDS
390 RETURN
400 INPUT " MANUFACTURE AMT.?"A
410 GOSUB 80
420 C=C-A*M
  
```




```

430 IF C<0PRINT " INSUFFICIENT FUNDS";C=C+X*M;RETURN
440 FOR I=1TO 3
450 IF I=NGOTO 480
460 @ (I)=@ (I)-A
470 IF @ (I)<0PRINT " MATERIALS GONE";@ (I)=@ (I)+A;C=C+X*M;
  RETURN
480 NEXT I;@ (N+3)=@ (N+3)+A;RETURN
500 INPUT " AMT. TO SELL?"A
510 GOSUB 80
520 @ (N+3)=@ (N+3)-A
530 IF @ (N+3)<0GOTO 560
540 C=C+A*@ (N+9)
550 RETURN
560 @ (N+3)=@ (N+3)+A
570 PRINT " PRODUCTS GONE
580 RETURN
600 CLEAR ;INPUT " HOW MANY YEARS? (1-3)"Y;IF (Y<1)+(Y>3)
  GOTO 600
610 Y=Y*12
620 FOR T=0TO Y
630 GOSUB 250
640 PRINT " MONTH",#3,T," YOU HAVE $",#4,C;PRINT " MFG.
  COSTS ARE $",#1,M
650 PRINT " TRANSACTION (0,B,M,S)? ";,BOX CX,CY,6,8,1;R=KP
  ;TV=R
660 IF (R=79)+(R=66)+(R=77)+(R=83)PRINT ;GOTO 680
670 PRINT ;GOTO 650
680 IF R=66GOSUB 300
690 IF R=77GOSUB 400
700 IF R=83GOSUB 500
710 GOSUB 100
720 NEXT T
730 PRINT " END OF ",#1,Y," MONTHS
740 FOR I=1TO 3
750 C=C+@ (I)*@ (I+6)
760 C=C+@ (I+3)*@ (I+9)
770 NEXT I
780 C=C-500
790 PRINT " YOUR PROFIT IS $",#1,C,".",
800 K=KP;RUN

```



Science may never come up with a better communications system than the coffee break.

Earl Wilson

APOLOGIES

to Bill Templeton are due!! There was a mistake in our last issue and Bill is the author of the program "CONNECT-THE-DOTS". Please accept our sincere apology Bill!!

OOOOOOOOOOOOOOOOOOOOOOOOOO

SHANGRI-LOGIC by: Phil D'Angelo

Shangri-La Video Productions

Here's what we hope will be the first of many articles exploring the world of video and it's relationship to your Bally.

As you already know, the Bally Arcade is a dynamic game system and easy to use micro-computer. What you may not realize are it's full capabilities and it's potential as a video graphics palette and titling system. A good working knowledge of "BASIC" and a bit of artistic flair can turn your home video tapes into interesting and professional looking shows. You also have the added blessing of owning one of the few home computers that puts out a true "NTSC" signal. This is why the colors and definitions that you get from your Bally are so vibrant and crisp!

What this means to you at home is that you can hook up your Bally to your video cassette recorder and get a clean vibrant image that can be recorded and copied with-out falling completely apart. I bought and sold a few computers before the Bally. One costing \$600 gave me an image that was pure "trash"; the next one was the apple of my eye until I found out I needed to spend hundreds of dollars more to do what I now do with my Bally at the push of a few buttons.

All you have to do is hook the Bally 'rf' out directly to your VCR 'rf' input and tune it to channel 3 or 4 as you do your TV. You will find that time spent fine tuning the image will help increase clarity. For a real jump in quality, go back to VOL. I, Issue #5 (June '80) of the BASIC EXPRESS for the schematics for the Audio/Video direct box. This takes the signal, splits it into it's component parts and feeds into your VCR audio-in and video-in jacks. The results are superb and the investment is small. Other options are the new "VIPER" with it's expanded memory and multi-color displays, and still in the works a "new" box that will replace the old 'rf' modulator, and give an even more distinct image. Some projects you may enjoy doing are putting together some of your favorite graphics programs on video tape. Then, by way of the audio dub function add some of your favorite music to it with some imagination you can even put together your own intermission segment complete with countdown and fireworks to herald the start of the next feature on tape...

MONSTER CHASE

by: ALEX MORALES

Here is a short fun game that everyone can enjoy playing.

The object is to 'stay alive' (keep away from the Monster) for 10 moves. At level one this is pretty easy, level two is a little harder, and at level three it is almost impossible!

You are "Y" and can only move up, down, right, or left. The Monster "M" can also move diagonally.

MONSTER CHASE

BY: ALEX MORALES

MONSTER CHASE



```

5 NT=0;CLEAR ;CX=-61;CY=0;PRINT "DIFFICULTY 1, 2 OR 3?"
  ;CX=-24;PRINT "-->",
6 CX=0;S=(KN(1)+128)/80;IF S=0S=1
7 PRINT #0,S,;IF TR(1)GOTO 10
8 GOTO 6
10 CLEAR ;BC=0;FC=7;L=-18;M=18;X=-18;Y=18;R=18;C=-18;Q=
  18
20 BOX 0,0,46,46,1
30 FOR A=-18TO 18STEP 9
40 FOR B=-18TO 18STEP 9
50 BOX A,B,8,8,2;NEXT B;NEXT A
60 CX=L;CY=M;TV=77;CX=M;CY=L;TV=89
70 CX=-35;CY=32;PRINT "MONSTER CHASE"
75 NT=3;FOR T=1TO 10
80 IF JX(1)=1IF JY(1)=0IF R#Q CX=R;CY=C;TV=32;R=R+9;CX=R
  ;CY=C;TV=89;GOTO 130
90 IF JY(1)=1IF JX(1)=0IF C#Q CX=R;CY=C;TV=32;C=C+9;CY=C
  ;CX=R;TV=89;GOTO 130
100 IF JX(1)=-1IF JY(1)=0IF R#Q CX=R;CY=C;TV=32;R=R-9;CX=
  -R;CY=C;TV=89;GOTO 130
110 IF JY(1)=-1IF JX(1)=0IF C#Q CX=R;CY=C;TV=32;C=C-9;CY=
  -C;CX=R;TV=89;GOTO 130
115 IF TR(1)GOTO 130
120 GOTO 80
130 IF R=XIF C=YGOTO 350
140 IF X=RIF Y<C D=1
150 IF X>RIF Y<C D=2
160 IF X>RIF Y=C D=3
170 IF X>RIF Y>C D=4
180 IF X=RIF Y>C D=5
190 IF X<RIF Y>C D=6
200 IF X<RIF Y=C D=7
210 IF X<RIF Y<C D=8
220 IF S=1D=D+RND (3)-1
225 IF S=2D=D+RND (2)-1
230 IF D=0D=8
240 IF D>9D=1
250 IF D>1IF D<5X=X-9
260 IF D>5X=X+9
  
```



```

270 IF D>3IF D<7Y=Y-9
280 IF (D<3)+(D=8)Y=Y+9
290 IF X<-18X=X+9
300 IF Y>18Y=Y-9
310 IF X>18X=X-9
320 IF Y<-18Y=Y+9
323 CX=L;CY=M;TV=32
326 CX=X;CY=Y;TV=77
328 L=X;M=Y
330 IF X=RIF Y=C GOTO 350
340 NEXT T
345 NT=0;L(21)=15;L(16)=49;FOR I=256TO 0STEP -2;L(19)=I;L
  (20)=I;NEXT I;L(21)=0;CX=-35;CY=-32;PRINT "YOU SURVIV
  ED!";GOTO 380
350 CX=CX-6;TV=77;FOR F=1TO 8
360 NT=0;FOR I=8TO 1STEP -2;BOX X,Y,I,I,3;L(21)=255;L(23)
  =200;L(19)=F*I;NEXT I;NEXT F;L(19)=0;L(21)=0;L(23)=0
370 CX=-38;CY=-32;PRINT "YOU ARE EATEN!"
380 IF TR(1)RUN
390 GOTO 380
  
```



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"SOUND" EFFECTS !!!

BY:

MIKE PEACE

As orders come into WaveMakers they seem to be accompanied more and more by questions on how to do something not covered in the basic manual. I've decided to try to answer some of these questions and share them via THE BASIC EXPRESS.

A number of you asked "How do you make a siren like the police cars use?" This can be used to produce flying saucer sounds as well as police cars. As Dan Drescher pointed out in an earlier BASIC EXPRESS the use of the LOOP is one of the most effective and efficient ways of accomplishing millions of tasks performed by the computer. This program can be slotted into any program at the point that you want this sound to appear. Use any variable that is available.

```
10 &(22)=15;FOR A=1TO 300;B=A÷10
20 &(17)=RM+20;NEXT A
```

In this program we first turn on the volume of tone &(17) by setting &(22) to 15. Next we loop "A" 300 times and divide it by 10 and store the answer in variable B. RM is the remainder of this division at the end of LINE 10 since the value of "A" cannot always be divided evenly by 10 we can have up to 10 values in variable RM 0 thru 9. We then set tone &(17) to RM and add 20 to it so that the tone will go from 20 to 29 for every 10 repeats of the loop and do that 30 times. Now we just need to get the sound to start quiet, then loud, then back to quiet so it sounds like a police car passing. ABS to the computer means absolute value. That is if a value is negative, the ABS value is positive and if a value is positive it remains unchanged. Keeping this in mind let's change line 10 and add something to line 20.

```
10 FOR A=-150TO 150
20 &(22)=15-ABS(A)÷10;&(17)=RM+20;NEXT A
```

Here we start with the volume &(22) in line 20 at 15 or full volume and subtract the ABS value of "A" divided by 10 or 15-15 so the start of our volume is 0 and increases as the loop continues toward 0 and then decreases as the number in the "A" counter gets larger. "Can I get a machine gun sound to work off the trigger?" Why not! Here's how.

```
10 &(23)= 255;&(19)=150
20 FOR A=255TO 0STEP -25;IF A<200IF TR
(1)A=255
30 IF A<200A=0
40 &(21)=A;NEXT A
```

"HOW ABOUT AN EXPLOSION?"

```
10 FOR A=255TO 0STEP -10;&(19)=90x(A>80)
20 &(23)=A;&(21)=255;NEXT A
```

In this program we use a 'little used statement' known as a "true/false statement". If a statement is 'true' the computer recognizes it as 1 and 0 if false. Line 10 above is a "true/false statement". This can take the place of an "IF Statement". To do the same thing that we just did in line 10 using "IF Statements" it would look like this:

```
10 FOR A=255TO 0STEP -10;&(19)=90;IF A<
80&(19)=0
```

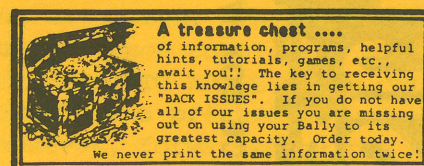
and even with all that it wouldn't work as fast and as well. It's possible to change these sounds by adding vibrato &(20) to get totally different sounds. In the first program add line 5 &(20)=15 and you've changed the police car to a flying saucer.

If you have any questions you would like answered, just drop a line to Mike Peace, c/o WAVEMAKERS, Box 94801, Schaumburg, IL 60192 and look for it in the next BASIC EXPRESS.

LATE UPDATE

by: FRED CORNETT

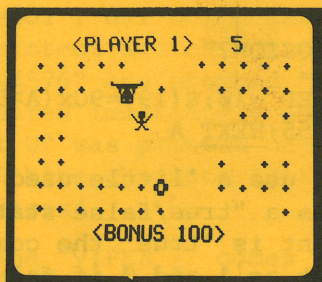
We have solved most of the problems we found with the "VIPER". 1. We can now get the complete lower case. 2. The problem we had with INPUT "HIGH", G was our fault. We deal with 4 other micro-computers, and sometimes we make syntax errors. The correct way is INPUT "HIGH"G. 3. We have converted "EXTENDED BASIC 1.0" to load through AstroVisions's New Basic Cartridge (2000 Baud). The Extended Basic loads in 48 seconds.



LOOKOUT for the BULL!



BOX 94801
SCHAUMBURG, IL 60193



TAPE 10

THE CHALLENGE NEVER ENDS, BECAUSE THE LEVEL OF PLAY IS BASED ON YOUR SCORE. YOU ARE IN A FIELD PICKING CLOVER ONE BY ONE AND FROM TIME TO TIME A LARGE (BONUS) CLOVER POPS UP. THIS SOUNDS EASY BUT WE'VE ALSO PUT A BULL IN THIS FIELD WITH YOU AND HE IS GETTING MAD BECAUSE YOU'RE PICKING HIS CLOVER. THE MORE YOU PICK THE MADDER HE GETS AND THE FASTER HE RUNS. HE WILL GET YOU, SO WE'VE ALSO GIVEN YOU UP TO TEN LIVES. BELIEVE ME YOU WILL NEED THEM. THE GAME CAN BE PLAYED WITH ONE TO FOUR PLAYERS ON INDIVIDUAL CONTROL HANDLES. KEEPS SCORE AND LEVEL OF PLAY FOR EACH PLAYER, CHANGES COLOR AS HIGHER LEVELS ARE REACHED. SIDE ONE HAS MACHINE GRAPHIC BULL AND MAN. SIDE TWO IS FOR THE MORE ADVANCED PLAYER. TAPE IS RECORDED IN BOTH BALLY AND ASTROVISION BASIC (THE COMPUTER SELECTS THE PROPER ONE). THIS IS PROBABLY THE MOST FUN AND CHALLENGING GAME EVER WRITTEN IN BASIC. LOADS QUICKLY. \$10.95



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